WHAT IS CLAIMED IS:

1. A method of producing an offer package comprising:

defining, within the offer package, a description of an offered product;

defining, within the offer package, a cost of the offered product;

defining, within the offer package, a merchant that is making the offer; and

including, within the offer package, an encrypted version of the offered product.

2. The method of claim 1 further comprising:

defining, within the offer package, a use duration for the offered product.

3. The method of claim 1 further comprising:

defining, within the offer package, the currency of the offer.

4. The method of claim 1 further comprising:

defining, within the offer package, an expiration date of the offer.

5. The method of claim 1 further comprising:

digitally signing the offer package.

6. The method of claim 1 further comprising:

encrypting the offered product to generate the encrypted-version of the offered product.

7. A method of producing an offer package comprising:

defining, within the offer package, a description of an offered product/service;

defining, within the offer package, a cost of the offered product/service;

defining, within the offer package, a merchant that is making the offer; and

including, within the offer package, an encrypted link to the offered product/service.

8. The method of claim 7 further comprising:

defining, within the offer package, a use duration for the offered product/service.

9. The method of claim 7 further comprising:

defining, within the offer package, the currency of the offer.

10. The method of claim 7 further comprising:

defining, within the offer package, an expiration date of the offer.

11. The method of claim 7 further comprising:

digitally signing the offer package.

12. The method of claim 7 further comprising:

encrypting a link to the offered product/service to generate the encrypted link.

13. A method of reducing download fraud comprising:

defining an offer package, wherein the offer package includes a offer description and an encrypted version of the offered product; and

requiring that a potential consumer download the offer package prior to being able to review the offer description.

14. The method of claim 13 further comprising:

requiring that a potential consumer download the offer package prior to being able to purchase the offer package.

15. The method of claim 14 further comprising:

allowing the potential consumer to decrypt the encrypted version of the offered product in response to the potential consumer purchasing the offer package.

16. The method of claim 15 wherein allowing the potential consumer to decrypt includes:

providing the potential consumer with a decryption key that allows the potential consumer to decrypt the encrypted version of the offered product.

17. A method of processing an offer package comprising:

validating the offer package;

accepting the offer package;

determining a cumulative spend amount for the consumer that accepted the offer package; and

generating a micropayment token that identifies the offer package and the cumulative spend amount.

18. The method of claim 17 further comprising:

reviewing an offer description included within the offer package prior to accepting the offer package.

19. The method of claim 17 further comprising:

digitally signing the micropayment token.

20. The method of claim 17 further comprising:

transmitting the micropayment token to a token processing system.

21. The method of claim 20 further comprising:

receiving a decryption key from the token processing system.

22. The method of claim 21 wherein:

the offer package concerns an offered product;

the offer package includes an encrypted version of the offered product; and

the decryption key allows the consumer to decrypt the encrypted version of the offered product.

23. The method of claim 21 wherein:

the offer package concerns an offered product/service;

the offer package includes an encrypted link to the offered product/service; and

the decryption key allows the consumer to decrypt the encrypted link.

24. The method of claim 17 wherein determining a cumulative spend amount includes:

obtaining a consumer certificate, concerning the consumer that accepted the offer package, from a token processing system;

wherein the consumer certificate includes a consumer identifier that allows for the retrieval of the cumulative spend amount.

25. The method of claim 17 further comprising:

retrieving the offer package from a remote location.

26. A method of processing micropayment tokens comprising:

receiving a micropayment token from a remote source, wherein the micropayment token concerns an offer package that was offered by a merchant and accepted by a consumer;

validating the micropayment token;

accepting the micropayment token for processing; and

selecting micropayment tokens for macropayment processing.

27. The method of claim 26 further comprising:

transmitting a decryption key to the consumer.

28. The method of claim 26 wherein validating the micropayment token includes:

validating the offer package that was offered by the merchant and accepted by the consumer.

29. The method of claim 26 wherein validating the micropayment token includes:

verifying that the offer package has not expired.

30. The method of claim 26 wherein selecting micropayment tokens for macropayment processing includes:

defining the accepted micropayment tokens as either selected micropayment tokens or unselected micropayment tokens;

wherein the selected micropayment tokens are used as the basis for paying a macropayment amount to the merchant.

31. The method of claim 30 wherein defining the accepted micropayment tokens includes:

defining the accepted micropayment tokens in accordance with a defined selection percentage.

32. The method of claim 31 wherein the defined selection percentage is one percent, resulting in one selected micropayment token for each ninety-nine unselected micropayment tokens.

33. The method of claim 31 wherein the defined selection percentage is ten percent, resulting in one selected micropayment token for each nine unselected micropayment tokens.

34. The method of claim 31 wherein each selected micropayment token defines a micropayment token amount, the method further comprising:

increasing the micropayment token amount in accordance with the inverse of the defined selection percentage, thus defining the macropayment amount.

35. The method of claim 34 further comprising:

digitally signing the micropayment token.

36. The method of claim 30 wherein defining the accepted micropayment tokens includes:

defining the accepted micropayment tokens in accordance with a desired macropayment amount.

37. The method of claim 36 wherein the desired macropayment amount is $100.

38. A method of processing selected micropayment tokens comprising:

validating a selected micropayment token; and

queuing the selected micropayment token;

wherein the selected micropayment token defines a macropayment amount, defines a micropayment token amount, and concerns an offer package that was offered by a merchant and accepted by a consumer.

39. The method of claim 38 wherein validating the selected micropayment token includes:

validating the offer package that was offered by the merchant and accepted by the consumer.

40. The method of claim 38 wherein validating the selected micropayment token includes:

verifying that the offer package has not expired.

41. The method of claim 38 wherein queuing the selected micropayment token includes:

placing the selected micropayment token into a processing queue, wherein a queue reserve is associated with the processing queue.

42. The method of claim 41 wherein the processing queue is a FIFO queue.

43. The method of claim 41 wherein each selected micropayment token further defines a cumulative spend amount, which is the sum of:

a last amount previously billed to the consumer; and

a differential amount that the consumer has spent since the last billing.

44. The method of claim 43 further comprising:

billing a consumer banking institution that is associated with the consumer for the sum of the micropayment token amount and the differential amount.

45. The method of claim 44 further comprising:

setting the last amount previously billed to the consumer equal to the sum of:

the last amount previously billed to the consumer;

the differential amount; and

the micropayment token amount.

46. The method of claim 45 further comprising:

setting the differential amount equal to zero.

47. The method of claim 43 further comprising:

depositing the sum of the micropayment token amount and the differential amount into the queue reserve associated with the processing queue.

48. The method of claim 41 further comprising:

comparing the macropayment amount of a next-to-be-processed selected micropayment token within the processing queue to the value of the queue reserve.

49. The method of claim 48 wherein the next-to-be-processed selected micropayment token is the selected micropayment token in a front position of the processing queue.

50. The method of claim 48 further comprising:

depositing the macropayment amount defined in the next-to-be-processed selected micropayment token into a merchant banking institution associated with the merchant.

51. A method of processing unselected micropayment tokens comprising:

authorizing for processing an unselected micropayment token; and

validating the unselected micropayment token;

wherein the unselected micropayment token defines a micropayment token amount, a cumulative spend amount, and concerns an offer package that was offered by a merchant and accepted by a consumer;

wherein the cumulative spend amount is the sum of:

a last amount previously billed to the consumer; and

a differential amount that the consumer has spent since the last billing.

52. The method of claim 51 wherein validating the unselected micropayment token includes:

validating the offer package that was offered by the merchant and accepted by the consumer.

53. The method of claim 51 wherein validating the unselected micropayment token includes:

verifying that the offer package has not expired.

54. The method of claim 51 further comprising:

placing the unselected micropayment token into a processing queue, wherein a queue reserve is associated with the processing queue.

55. The method of claim 54 wherein the processing queue is a FIFO queue.

56. The method of claim 54 further comprising:

billing a consumer banking institution that is associated with the consumer for the sum of the micropayment token amount and the differential amount.

57. The method of claim 56 further comprising:

setting the last amount previously billed to the consumer equal to the sum of:

the last amount previously billed to the consumer;

the differential amount; and

the micropayment token amount.

58. The method of claim 57 further comprising:

setting the differential amount equal to zero.

59. The method of claim 54 further comprising:

depositing the sum of the micropayment token amount and the differential amount into the queue reserve associated with the processing queue.

60. The method of claim 51 wherein authorizing for processing an unselected micropayment token includes:

comparing a predetermined time period to an actual time period since the unselected micropayment token was generated;

wherein the unselected micropayment token is authorized for processing if the actual time period exceeds the predetermined time period.

61 The method of claim 60 wherein the predetermined time period is thirty days.

62. The method of claim 51 wherein authorizing for processing an unselected

micropayment token includes:

comparing a predefined minimum billing threshold to the differential amount;

wherein the unselected micropayment token is authorized for processing if the differential amount exceeds the predetermined time period.

63. The method of claim 62 wherein the predefined minimum billing threshold is five dollars.

64. A computer program product residing on a computer readable medium having a plurality of instructions stored thereon which, when executed by the processor, cause that processor to:

define, within an offer package, a description of an offered product;

define, within the offer package, a cost of the offered product;

define, within the offer package, a merchant that is making the offer; and

include, within the offer package, an encrypted version of the offered product.

65. The computer program product of claim 64 further comprising instructions for:

defining, within the offer package, a use duration for the offered product.

66. The computer program product of claim 64 further comprising instructions for:

defining, within the offer package, the currency of the offer.

67. The computer program product of claim 64 further comprising instructions for:

defining, within the offer package, an expiration date of the offer.

68. The computer program product of claim 64 further comprising instructions for:

digitally signing the offer package.

69. The computer program product of claim 64 further comprising instructions for:

encrypting the offered product to generate the encrypted-version of the offered product.

70. A computer program product residing on a computer readable medium having a plurality of instructions stored thereon which, when executed by the processor, cause that processor to:

define, within an offer package, a description of an offered product/service;

define, within the offer package, a cost of the offered product/service;

define, within the offer package, a merchant that is making the offer; and

include, within the offer package, an encrypted link to the offered product/service.

71. The computer program product of claim 70 further comprising instructions for:

defining, within the offer package, a use duration for the offered product/service.

72. The computer program product of claim 70 further comprising instructions for:

defining, within the offer package, the currency of the offer.

73. The computer program product of claim 70 further comprising instructions for:

defining, within the offer package, an expiration date of the offer.

74. The computer program product of claim 70 further comprising instructions for:

digitally signing the offer package.

75. The computer program product of claim 70 further comprising instructions for:

encrypting a link to the offered product/service to generate the encrypted link.

76. A computer program product residing on a computer readable medium having a plurality of instructions stored thereon which, when executed by the processor, cause that processor to:

define an offer package, wherein the offer package includes a offer description and an encrypted version of the offered product; and

require that a potential consumer download the offer package prior to being able to review the offer description.

77. The computer program product of claim 76 further comprising instructions for:

requiring that a potential consumer download the offer package prior to being able to purchase the offer package.

78. The computer program product of claim 77 further comprising instructions for:

allowing the potential consumer to decrypt the encrypted version of the offered product in response to the potential consumer purchasing the offer package.

79. The computer program product of claim 78 wherein the instructions for allowing the potential consumer to decrypt include instructions for:

providing the potential consumer with a decryption key that allows the potential consumer to decrypt the encrypted version of the offered product.

80. A computer program product residing on a computer readable medium having a plurality of instructions stored thereon which, when executed by the processor, cause that processor to:

validate an offer package;

accept the offer package;

determine a cumulative spend amount for the consumer that accepted the offer package; and

generate a micropayment token that identifies the offer package and the cumulative spend amount.

81. The computer program product of claim 80 further comprising instructions for:

reviewing an offer description included within the offer package prior to accepting the offer package.

82. The computer program product of claim 80 further comprising instructions for:

digitally signing the micropayment token.

83. The computer program product of claim 80 further comprising instructions for:

transmitting the micropayment token to a token processing system.

84. The computer program product of claim 83 further comprising instructions for:

receiving a decryption key from the token processing system.

85. The computer program product of claim 84 wherein:

the offer package concerns an offered product;

the offer package includes an encrypted version of the offered product; and

the decryption key allows the consumer to decrypt the encrypted version of

the offered product.

86. The computer program product of claim 84 wherein:

the offer package concerns an offered product/service;

the offer package includes an encrypted link to the offered product/service; and

the decryption key allows the consumer to decrypt the encrypted link.

87. The computer program product of claim 80 wherein the instructions for determining a cumulative spend amount include instructions for:

obtaining a consumer certificate, concerning the consumer that accepted the offer package, from a token processing system;

wherein the consumer certificate includes a consumer identifier that allows for the retrieval of the cumulative spend amount.

88. The computer program product of claim 80 further comprising instructions for:

retrieving the offer package from a remote location.

89. A computer program product residing on a computer readable medium having a plurality of instructions stored thereon which, when executed by the processor, cause that processor to:

receive a micropayment token from a remote source, wherein the micropayment token concerns an offer package that was offered by a merchant and accepted by a consumer;

validate the micropayment token;

accept the micropayment token for processing; and

select micropayment tokens for macropayment processing.

90. The computer program product of claim 89 further comprising instructions for:

transmitting a decryption key to the consumer.

91. The computer program product of claim 89 wherein the instructions for validating the micropayment token include instructions for:

validating the offer package that was offered by the merchant and accepted by the consumer.

92. The computer program product of claim 89 wherein the instructions for validating the micropayment token include instructions for:

verifying that the offer package has not expired.

93. The computer program product of claim 89 wherein the instructions for selecting micropayment tokens for macropayment processing include instructions for:

defining the accepted micropayment tokens as either selected micropayment tokens or unselected micropayment tokens;

wherein the selected micropayment tokens are used as the basis for paying a

macropayment amount to the merchant.

94. The computer program product of claim 93 wherein the instructions for defining the accepted micropayment tokens include instructions for:

defining the accepted micropayment tokens in accordance with a defined selection percentage.

95. The computer program product of claim 94 wherein the defined selection percentage is one percent, resulting in one selected micropayment token for each ninety-nine unselected micropayment tokens.

96. The computer program product of claim 94 wherein the defined selection percentage is ten percent, resulting in one selected micropayment token for each nine unselected micropayment tokens.

97. The computer program product of claim 94 wherein each selected micropayment token defines a micropayment token amount, the computer program product further comprising instructions for:

increasing the micropayment token amount in accordance with the inverse of the defined selection percentage, thus defining the macropayment amount.

98 The computer program product of claim 97 further comprising instructions for:

digitally signing the micropayment token.

99. The computer program product of claim 93 wherein the instructions for defining the accepted micropayment tokens include instructions for:

defining the accepted micropayment tokens in accordance with a desired

macropayment amount.

100. The computer program product of claim 99 wherein the desired macropayment amount is $100.

101. A computer program product residing on a computer readable medium having a plurality of instructions stored thereon which, when executed by the processor, cause that processor to:

validate a selected micropayment token; and

queue the selected micropayment token;

wherein the selected micropayment token defines a macropayment amount, defines a micropayment token amount, and concerns an offer package that was offered by a merchant and accepted by a consumer.

102. The computer program product of claim 101 wherein the instructions for validating the selected micropayment token include instructions for:

validating the offer package that was offered by the merchant and accepted by the consumer.

103. The computer program product of claim 101 wherein the instructions for validating the selected micropayment token include instructions for:

verifying that the offer package has not expired.

104. The computer program product of claim 101 wherein the instructions for queuing the selected micropayment token include instructions for:

placing the selected micropayment token into a processing queue, wherein a queue reserve is associated with the processing queue.

105. The computer program product of claim 104 wherein the processing queue is a FIFO queue.

106. The computer program product of claim 104 wherein each selected micropayment

token further defines a cumulative spend amount, which is the sum of:

a last amount previously billed to the consumer; and

a differential amount that the consumer has spent since the last billing.

107. The computer program product of claim 106 further comprising instructions for:

billing a consumer banking institution that is associated with the consumer for the sum of the micropayment token amount and the differential amount.

108. The computer program product of claim 107 further comprising instructions for:

setting the last amount previously billed to the consumer equal to the sum of:

the last amount previously billed to the consumer;

the differential amount; and

micropayment token amount.

109. The computer program product of claim 108 further comprising instructions for:

setting the differential amount equal to zero.

110. The computer program product of claim 106 further comprising instructions for:

depositing the sum of the micropayment token amount and the differential amount into the queue reserve associated with the processing queue.

111. The computer program product of claim 104 further comprising instructions for:

comparing the macropayment amount of a next-to-be-processed selected micropayment token within the processing queue to the value of the queue reserve.

112. The computer program product of claim 111 wherein the next-to-be-processed

selected micropayment token is the selected micropayment token in a front position of the processing queue.

113. The computer program product of claim 111 further comprising instructions for:

depositing the macropayment amount defined in the next-to-be-processed selected micropayment token into a merchant banking institution associated with the merchant.

114. A computer program product residing on a computer readable medium having a plurality of instructions stored thereon which, when executed by the processor, cause that processor to:

authorize for processing an unselected micropayment token; and

validate the unselected micropayment token;

wherein the unselected micropayment token defines a micropayment token amount, a cumulative spend amount, and concerns an offer package that was offered by a merchant and accepted by a consumer;

wherein the cumulative spend amount is the sum of:

a last amount previously billed to the consumer; and

a differential amount that the consumer has spent since the last billing.

115. The computer program product of claim 114 wherein the instructions for validating the unselected micropayment token include instructions for:

validating the offer package that was offered by the merchant and accepted by the consumer.

116. The computer program product of claim 114 wherein the instructions for validating the unselected micropayment token include instructions for:

verifying that the offer package has not expired.

117. The computer program product of claim 114 further comprising instructions for:

placing the unselected micropayment token into a processing queue, wherein a queue reserve is associated with the processing queue.

118. The computer program product of claim 117 wherein the processing queue is a

FIFO queue.

119. The computer program product of claim 117 further comprising instructions for:

billing a consumer banking institution that is associated with the consumer for the sum of the micropayment token amount and the differential amount.

120. The computer program product of claim 119 further comprising instructions for:

setting the last amount previously billed to the consumer equal to the sum of:

the last amount previously billed to the consumer;

the differential amount; and

the micropayment token amount.

121. The computer program product of claim 120 further comprising instructions for:

setting the differential amount equal to zero.

122. The computer program product of claim 117 further comprising instructions for:

depositing the sum of the micropayment token amount and the differential amount into the queue reserve associated with the processing queue.

123. The computer program product of claim 114 wherein the instructions for authorizing for processing an unselected micropayment token include instructions for:

comparing a predetermined time period to an actual time period since the unselected micropayment token was generated;

wherein the unselected micropayment token is authorized for processing if the actual time period exceeds the predetermined time period.

124. The computer program product of claim 123 wherein the predetermined time period is thirty days.

125. The computer program product of claim 114 wherein the instructions for authorizing for processing an unselected micropayment token include instructions for:

comparing a predefined minimum billing threshold to the differential amount;

wherein the unselected micropayment token is authorized for processing if the differential amount exceeds the predetermined time period.

126. The computer program product of claim 125 wherein the predefined minimum billing threshold is five dollars.

127. A batch encoding method comprising:

defining a batch size definition;

obtaining two or more data objects that satisfy the batch size definition;

hashing each data object to generate an N^{th} order hashed data object for each data object;

grouping the N^{th} order hashed data objects into one or more pairs of N^{th} order hashed data objects; and

hashing each pair of N^{th} order hashed data objects to generate an N^{th+1} order hashed data object for each pair of N^{th} order hashed data objects;

wherein grouping the N^{th} order hashed data objects and hashing each pair of N^{th} order hashed data objects is recursively repeated until there is only one N^{th+1} order hashed data object generated.

128. The method of claim 127 further comprising:

digitally signing the N^{th+1} order hashed data object.

129. The method of claim 127 wherein:

the number of N^{th} order hashed data objects generated is an odd number; and

grouping the N^{th} order hashed data objects results in one or more pairs of N^{th} order hashed data objects and a single N^{th} order hashed data object.

130. The method of claim 129 wherein:

grouping the N^{th} order hashed data objects includes grouping the single N^{th} order hashed data object with an M^{th} order hashed data object, wherein the M^{th} order hashed data object is a higher order hashed data object than the single N^{th} order hashed data object; and

hashing each pair of N^{th} order hashed data objects includes hashing the single N^{th} order hashed data object with the M^{th} order hashed data object to generate an M^{th+1} order hashed data object.

131. The method of claim 127 wherein defining a batch size definition includes:

defining a time period.

132. The method of claim 131 wherein the time period is 100 milliseconds.

133. The method of claim 131 wherein obtaining two or more data objects includes:

obtaining data objects made available during the time period.

134. The method of claim 127 wherein defining a batch size definition includes:

defining a number of data objects.

135. The method of claim 127 wherein the data object is a micropayment token.

136. The method of claim 135 wherein the micropayment token is a selected micropayment token.

137. The method of claim 135 wherein the micropayment token is an unselected micropayment token.

138. The method of claim 127 wherein the data object is an offer package.

139. A computer program product residing on a computer readable medium having a plurality of instructions stored thereon which, when executed by the processor, cause that processor to:

define a batch size definition;

obtain two or more data objects that satisfy the batch size definition;

hash each data object to generate an N^{th} order hashed data object for each data object;

group the N^{th} order hashed data objects into one or more pairs of N^{th} order hashed data objects; and

hash each pair of N^{th} order hashed data objects to generate an N^{th+1} order hashed data object for each pair of N^{th} order hashed data objects;

wherein grouping the N^{th} order hashed data objects and hashing each pair of N^{th} order hashed data objects is recursively repeated until there is only one N^{th+1} order hashed data object generated.

140. The computer program product of claim 139 further comprising instructions for:

digitally signing the N^{th+1} order hashed data object.

141. The computer program product of claim 139 wherein:

the number of N^{th} order hashed data objects generated is an odd number; and

grouping the N^{th} order hashed data objects results in one or more pairs of N^{th} order hashed data objects and a single N^{th} order hashed data object.

142. The computer program product of claim 141 wherein:

the instructions for grouping the N^{th} order hashed data objects include instructions for grouping the single N^{th} order hashed data object with an M^{th} order

hashed data object, wherein the M^{th} order hashed data object is a higher order hashed data object than the single N^{th} order hashed data object; and

the instructions for hashing each pair of N^{th} order hashed data objects include instructions for hashing the single N^{th} order hashed data object with the M^{th} order hashed data object to generate an M^{th+1} order hashed data object.

143. The computer program product of claim 139 wherein the instructions for defining a batch size definition include instructions for:

defining a time period.

144. The computer program product of claim 143 wherein the time period is 100 milliseconds.

145. The computer program product of claim 143 wherein the instructions for obtaining two or more data objects include instructions for:

obtaining data objects made available during the time period.

146. The computer program product of claim 139 wherein the instructions for defining a batch size definition include instructions for:

defining a number of data objects.

147. The computer program product of claim 139 wherein the data object is a micropayment token.

148. The computer program product of claim 147 wherein the micropayment token is a selected micropayment token.

149. The computer program product of claim 147 wherein the micropayment token is an unselected micropayment token.

150. The computer program product of claim 139 wherein the data object is an offer package.

151. A verification method comprising:

receiving a hashed, multi-level, data object, wherein the hashed, multi-level, data object includes one or more hashed, non-target data objects;

receiving one or more sequential data keys, wherein each sequential data key corresponds to a hashed, non-target data object at a unique level within the hashed, multi-level, data object;

receiving a non-hashed, target data object;

hashing the non-hashed, target data object to generate an N^{th} level hashed data object;

grouping the N^{th} level hashed data object with an N^{th} level, sequential data key to generate an N^{th} level object/key pair; and

hashing the N^{th} level object/key pair to generate an N^{th+1} level hashed data object;

wherein grouping the N^{th} level hashed data object and hashing the N^{th} level object/key pair are repeated for each sequential data key.

152. The method of claim 151 wherein the hashed, multi-level, data object is an encrypted, hashed, multi-level, data object, the method further comprising:

decrypting the encrypted, hashed, multi-level, data object to generate a decrypted, hashed, multi-level, data object.

153. The method of claim 152 further comprising:

comparing the decrypted, hashed, multi-level, data object to the highest-level hashed data object generated to determine the validity of the hashed, multi-level data object.

154. The method of claim 151 wherein the non-hashed, target data object is a

micropayment token.

155. The method of claim 154 wherein the micropayment token is a selected micropayment token.

156. The method of claim 154 wherein the micropayment token is an unselected micropayment token.

157. The method of claim 151 wherein the non-hashed, target data object is an offer package.

158. A computer program product residing on a computer readable medium having a plurality of instructions stored thereon which, when executed by the processor, cause that processor to:

receive a hashed, multi-level, data object, wherein the hashed, multi-level, data object includes one or more hashed, non-target data objects;

receive one or more sequential data keys, wherein each sequential data key corresponds to a hashed, non-target data object at a unique level within the hashed, multi-level, data object;

receive a non-hashed, target data object;

hash the non-hashed, target data object to generate an N^{th} level hashed data object;

group the N^{th} level hashed data object with an N^{th} level, sequential data key to generate an N^{th} level object/key pair; and

hash the N^{th} level object/key pair to generate an N^{th+1} level hashed data object;

wherein grouping the N^{th} level hashed data object and hashing the N^{th} level object/key pair are repeated for each sequential data key.

159. The computer program product of claim 158 wherein the hashed, multi-level, data object is an encrypted, hashed, multi-level, data object, the computer program product further comprising instructions for:

decrypting the encrypted, hashed, multi-level, data object to generate a decrypted, hashed, multi-level, data object.

160. The computer program product of claim 159 further comprising instructions for:

comparing the decrypted, hashed, multi-level, data object to the highest-level hashed data object generated to determine the validity of the hashed,

multi-level data object.

161. The computer program product of claim 158 wherein the non-hashed, target data object is a micropayment token.

162. The computer program product of claim 161 wherein the micropayment token is a selected micropayment token.

163. The computer program product of claim 161 wherein the micropayment token is an unselected micropayment token.

164. The computer program product of claim 158 wherein the non-hashed, target data object is an offer package.

165. A secure payment processing system comprising:

at least one secure module; and

at least one non-secure module;

wherein a plurality of tokens are transferred between the at least one secure module and the at least one non-secure module;

wherein at least one of the modules executes a micropayment selection protocol that selects one or more, but not all, of the tokens for processing from the plurality of tokens.

166. The system of claim 165 wherein the at least one secure module includes a cPSP module.

167. The system of claim 165 wherein the at least one secure module includes an mPSP module.

168. The system of claim 165 wherein the at least one non-secure module includes a consumer agent module.

169. The system of claim 165 wherein the at least one non-secure module includes an offer development module.

170. The system of claim 165 wherein the at least one non-secure module includes a PCS module.

171. The system of claim 165 wherein the micropayment selection protocol establishes payment for a transaction T, the protocol comprising:

A. a first party deriving from T a data string C related to T, and causing a second

party to receive at least a portion of said data string C;

B. the second party associating with said at least a portion of C an item V, wherein V is substantially unpredictable by the first party;

C. the second party determining whether V satisfies a property P, and if so, the second party causing a third party to receive information I enabling the third party to verify whether V satisfies said property P;

D. the third party, upon receiving I, verifying whether V satisfies said property P; and

E. the third party causing a fourth party to receive an amount A, only if V satisfies said property P.

172. The system of claim 165 wherein the micropayment selection protocol allows a user U to establish payment to a merchant M for a transaction T having a transaction value T_V, the protocol comprising:

A. the user establishing a public key and a corresponding secret key for a first digital signature scheme, and deriving from T a data string $C = SIG_U(T)$ to create an electronic check containing C, wherein $SIG_U(T)$ represents the digital signature of the user U for the transaction T in said first digital signature scheme;

B. the user causing the merchant to receive said data string C;

C. the merchant establishing a public key and a corresponding secret key for a second digital signature scheme, and associating with said data string C an item $V = SIG_M(C)$, wherein $SIG_M(C)$ represents the digital signature of the merchant M for said data string C in said second digital signature scheme;

D. the merchant computing the value $F(V)=F(SIG_M(C))$, where F represents a public function that operates on a bit string to output a number between 0 and 1;

E. the merchant comparing $F(SIG_M(C))$ with a constant s to determine whether $F(V) < s$, and if so, causing a bank to obtain said public key of the merchant;

F. the bank using said public key of the merchant to verify that $F(SIG_M(C)) < s$; and

G. only if $F(SIG_M(C)) < s$, the bank causing the merchant to receive an amount $A = [T_V * 1/s]$;

wherein s is a constant greater than 0 and less than 1, and represents the probability that the electronic check be selected for presentation to the bank.

173. The system of claim 165 wherein the micropayment selection protocol establishes payment for a transaction T, the protocol comprising:

A. a first party receiving from a second party at least a portion of a data string C, wherein said data string C is related to T;

B. the first party associating with said at least a portion of C an item V, wherein V is substantially unpredictable by the second party; and

C. the first party determining whether V satisfies a property P, and only if so, the first party causing a third party to receive information I enabling the third party to verify whether V satisfies said property P, thereby enabling the third party to cause a fourth party to receive an amount A upon verification that V satisfies P.

174. The system of claim 165 wherein the micropayment selection protocol establishes payment for a transaction T, the protocol comprising:

A. a first party receiving from a second party information I enabling the first party to verify that an item V satisfies a property P;

wherein said item V is associated with at least a portion of a data string C derived from T by a third party, and

wherein V is substantially unpredictable by said third party;

B. the first party, upon receiving I, verifying whether V satisfies said property P; and

C. the first party causing a fourth party to receive an amount A, only if V satisfies said property P.

175. The system of claim 165 wherein the micropayment selection protocol establishes payment for a transaction T characterized in part by a time t, the protocol comprising:

A. a first party deriving from T a data string C related to T, wherein C includes information IN regarding said time t;

B. the first party causing a second party to receive at least a portion of said data string C, wherein said at least a portion of C includes information IN;

C. the second party associating with said at least a portion of C an item V, wherein V is substantially unpredictable by the first party;

D. the second party determining whether V satisfies a property P, and if so, the second party at time t' causing a third party to receive information IN and information I enabling the third party to verify whether V satisfies said property P;

E. the third party, upon receiving I, verifying whether V satisfies said property P; and

F. the third party causing a fourth party to receive an amount A, only if:

a) V satisfies said property P, and

b) $|t' - t|$ is less than a predetermined time interval.

176. The system of claim 165 wherein the micropayment selection protocol establishes payment for a transaction T, the protocol comprising:

A. a first party deriving from T a data string C related to T, and causing a second party to receive at least a portion of said data string C;

B. the second party determining whether a property P holds between said at least a portion of C and a quantity Q depending on C, wherein Q is substantially unpredictable by the first party, and if so, the second party causing a third party to

receive information I enabling the third party to verify that said property P is satisfied;

C. the third party, upon receiving I, verifying whether said property P is satisfied; and

D. only upon verifying that said property P holds between said at least a portion of C and Q, the third party causing a fourth party to receive an amount A.

177. The system of claim 165 wherein the micropayment selection protocol establishes payment for a transaction T characterized in part by a time t, the protocol comprising:

A. a first party deriving from T a data string C related to T;

B. a second party deriving a sequence of values VL_i associated with a sequence of times t_i ($i = 1, \ldots, n$), wherein for at least one integer m greater than 1 and less than n, $|t - t_m|$ is less than a predetermined amount;

C. the first party causing the second party to receive at least a portion of said data string C, wherein said portion includes information regarding the time t of said transaction T;

D. the second party determining whether a property P holds between said portion of C, and one of said value VL_m associated with t_m, and a quantity Q depending on VL_m;

E. if P holds, the second party causing a third party to receive information I enabling the third party to verify that said property P is satisfied;

F. the third party, upon receiving I, verifying whether Q satisfies P; and

G. the third party causing a fourth party to receive an amount A, only if Q satisfies said property P.

178. The system of claim 165 wherein the micropayment selection protocol establishes payment for a transaction T characterized in part by a transaction t, the protocol

comprising:

A. a first party deriving from T a data string C related to T, wherein C includes information regarding t;

B. a second party deriving a sequence of values V_j associated with a sequence of time units t_i (i = 1, . . . , n);

wherein each pair of adjacent time units t_{i+1} and t_i defines a time interval $\Delta t_i = t_{i+1} - t_i$; and

wherein for at least an integer m greater than 1 and less than n, said time t is within the time interval Δt_m;

C. at the beginning of said time interval Δt_m, the second party deriving a value Q_m associated with V_m, wherein Q_m is substantially unpredictable by the first party;

D. during said time interval Δt_m:

a) the first party causing the second party to receive at least a portion of C;

b) the second party determining whether a property P holds between said portion of C and Q_m, and if so, the second party causing a third party to receive information I enabling the third party to verify that said property P is satisfied;

E. the third party, upon receiving I, verifying whether Q satisfies P; and

F. the third party causing a fourth party to receive an amount A, only if Q satisfies said property P.

179. The system of claim 165 wherein the micropayment selection protocol establishes payment for a transaction T characterized in part by a time t, the protocol comprising:

A. a first party deriving from T a data string C related to T, wherein C includes information F regarding t;

B. a second party deriving a sequence of values x_i (i = 0, 1, . . . , n) associated

with a sequence of time values t_i ($i = 0, 1, \ldots, n$), and making x_0 public;

wherein $x_i = H(x_{i+1})$ for $i = 0, 1, \ldots, n-1$, where H is a one-way hash function;

wherein each pair of adjacent time values t_{i+1} and t_i defines a time interval $\Delta t_i = t_{i+1} - t_i$; and

wherein for at least an integer m greater than 1 and less than n, said time t is the time interval Δt_m;

C. during said time interval Δt_m, the first party causing the second party to receive at least a portion of C, wherein said portion includes F;

D. during said time interval Δt_m, the second party determining whether a property P holds between Q_m and said portion of C, and if so, the second party causing a third party to receive information I enabling the third party to verify that said property P is satisfied;

E. the third party, upon receiving I, verifying whether Q_m satisfies P; and

F. the third party causing a fourth party to receive an amount A, only if Q satisfies said property P.

180. The system of claim 165 wherein the micropayment selection protocol establishes payment for a transaction T characterized in part by a time t, the protocol comprising:

A. a first party receiving from a second party at time t' information I enabling the first party to verify that an item V satisfies a property P;

wherein said item V is associated with at least a portion of a data string C that is derived from T by a third party and that includes information regarding t; and

wherein V is substantially unpredictable by said third party;

B. the first party, upon receiving I, verifying whether V satisfies said property P; and

C. the first party causing a fourth party to receive an amount A, only if:

a) V satisfies said property P; and

b) |t' - t| is less than a predetermined amount.

181. The system of claim 165 wherein the micropayment selection protocol establishes payment for a transaction T characterized in part by a time t, the protocol comprising:

A. a first party receiving from a second party at least a portion of a data string C, wherein said data string C is related to T, and wherein said portion of C includes information on t;

B. the first party associating with said at least a portion of C an item V, wherein V is substantially unpredictable by the second party; and

C. the first party determining whether V satisfies a property P, and if so, the first party at a time t' causing a third party to receive information I enabling the third party to verify whether V satisfies said property P, thereby enabling the third party to cause a fourth party to receive an amount A, provided that

a) V satisfies P; and

b) | t' - t | is less than a predetermined amount.

182 The system of claim 165 wherein the micropayment selection protocol establishes payment for a plurality of n transactions $T_1, T_2, \ldots T_i, \ldots T_n$, wherein an index i, between 1 and n, can be associated with each T_i, and wherein each transaction T_i is characterized in part by a transaction value TV_i, the protocol comprising:

A. a first party using a probabilistic payment scheme to generate a check C_i for each transaction T_i and causing a second party to receive said C_i, wherein C_i includes an indication of the index i;

B. the second party selecting the checks C_j ($1 \leq j \leq n$) that are payable in a manner that prevents the first party from predicting in advance which checks C_j will be selected to be payable;

C. the second party causing a third party to receive information I_j enabling the third party to verify that a selected check C_j is payable;

D. the third party, in response to receipt of I_j, verifying that a selected check C_j is payable; and

E. only if C_j is payable, a fifth party causing a fourth party to receive a credit amount CR_j, and causing the first party to be debited by a debit amount D_j so that, for all index j between 1 and n, and for any selection of payable checks, $D=D_1+D_2+...+D_j$ is no greater than $TV_{agg} = TV_1 + TV_2 + \ldots + TV_j$.

183. The system of claim 165 wherein the micropayment selection protocol establishes payment for a plurality of n transactions $T_1, T_2, \ldots T_i, \ldots T_n$, wherein an index i, between 1 and n, can be associated with each T_i, and wherein each transaction T_i is characterized in part by a transaction value TV_i, the protocol comprising:

A. a first party deriving from each transaction T_i a data string C_i related to T_i, and causing a second party to receive said data string C_i;

B. the second party associating with each data string C_i an item V_i, wherein V_i is substantially unpredictable by the first party;

C. the second party determining whether V_i satisfies a property P_i, and if so, the second party causing a third party to receive information I_i enabling the third party to verify whether V_i satisfies said property P_i;

D. the third party, in response to receipt of I_i, verifying whether V_i satisfies said property P_i; and

E. only if V_i satisfies said property P_i, a fifth party causing a fourth party to receive a credit amount CR_i, and causing the first party to be debited by a debit amount D_i;

wherein said debit amount D_i is less than or equal to said credit amount CR_i.

184. The system of claim 165 wherein the micropayment selection protocol pays for a plurality of equal-valued transactions $T_1, T_2, \ldots T_i, \ldots T_n$, each having a value TV, the protocol comprising:

A. a first party deriving from each transaction T_i a data string C_i related to T_i, and causing a second party to receive said data string C_i;

wherein each data string C_i comprises a progressive serial number S_i, said serial number S_i being sequentially ordered starting from 1 and being representative of a position of C_i relative to other data strings in an ordered succession of data strings C_j ($j = 1, \ldots, n$);

B. the second party associating with C_i an item V_i, wherein V_i is substantially unpredictable by the first party;

C. the second party determining whether a property P_i holds between C_i and V_i, and if so, the second party causing a third party to receive information I_i enabling the third party to verify whether V_i satisfies P_i;

D. the third party verifying whether V_i satisfies P_i; and only if V_i satisfies P_i:

a) a fifth party determining the value of S_{max}, wherein S_{max} represents the largest of any serial number S_k contained in C_k for which:

i) $1 \leq k < n$;

ii) C_k is received by second party before receiving C_i;

iii) the third party has verified that V_k satisfies P_k; and

iv) said first party has been debited by a nonzero amount D_k;

b) said fifth party causing a fourth party to receive a credit amount CR; and

c) said fifth party causing the first party to be debited by a debit amount D_i, where D_i is given by:

$(S_i - S_{max}) * TV.$

185. The system of claim 165 wherein the micropayment selection protocol allows a user to establish payment to a merchant M for a plurality of transactions T_i (i = 1, . . . , n) having transaction values TV_i (i = 1, . . . , n), the protocol comprising:

A. the user U establishing a public key and a corresponding secret key for a first digital signature scheme, and deriving from each T_i a data string $C_i = SIG_U(T_i)$ and creating an electronic check CH_i that contains C_i and a serial number S_i;

wherein $SIG_U(T_i)$ represents the digital signature of the user U_i for the transaction T_i in said first digital signature scheme;

wherein S_i is a progressive serial number representative of an order of said data string C_i relative to the other data strings in an ordered succession of data strings C_j (j = 1, . . . , n) derived by said first party;

B. the user U causing the merchant M to receive said electronic check CH_i containing C_i and S_i;

C. the merchant M establishing a public key and a corresponding secret key for a second digital signature scheme, and associating with said data string C_i an item $V_i = SIG_M(C_i)$, wherein $SIG_M(C_i)$ represents the digital signature of the merchant M for said data string Ci in said second digital signature scheme;

D. the merchant M computing the value $F(V_i)=F(SIG_M(C_i))$, where F represents a public function that operates on a bit string to output a number between 0 and 1;

E. the merchant M comparing $F(SIG_M(C_i))$ with a constant s ($0 < s < 1$) to determine whether $F(V_i) < s$, and if so, causing a bank to obtain said public key of the merchant M;

F. the bank using the merchant's public key to verify that $F(SIG_M(C_i)) <s$; and

G. only if $F(SIG_M(C_i)) < s$,

a) a fifth party determining the value of S_{max}, wherein S_{max} represents

the largest serial number S_j contained in any CH_j in said ordered succession upon which payment was made;

b) said fifth party causing a fourth party to receive a credit amount CR; and

c) said fifth party causing the first party to be debited by a debit amount D_i.

186. The system of claim 165 wherein the micropayment selection protocol establishes payment for a plurality of n transactions $T_1, T_2, \ldots, T_i, \ldots, T_n$, wherein an index i, between 1 and n, can be associated with each T_i, and wherein each transaction T_i is characterized in part by a transaction value TV_i, the protocol comprising:

A. a first party receiving from a second party at least a portion of a data string Ci for each Ti, wherein each data string Ci is generated from Ti using a probabilistic payment scheme, and wherein each Ci includes an indication of the index i;

B. the first party selecting the checks Cj (j less than or equal to n and greater than or equal to 1) that are payable in a manner that prevents the first party from predicting in advance which checks Cj will be selected as payable;

C. for each selected check Cj, the first party causing a third party to receive information Ij enabling the third party to verify that the selected check Cj is indeed payable, thereby enabling the third party, upon verification that Cj is payable, to cause a fourth party to receive a credit amount CRj and the second party to be debited by a debit amount Dj so that, for all index j between 1 and n, and for any selection of payable checks Cj, $D = D_1 + D_2 + \ldots D_j$ is no greater than $TV_{agg} = TV_1 + TV_2 + \ldots + TV_j$.

187. The system of claim 165 wherein the micropayment selection protocol establishes payment for a plurality of n transactions $T_1, T_2, \ldots, T_i, \ldots, T_n$, wherein an index i,

between 1 and n, can be associated with each T_i, and wherein each transaction T_i is characterized in part by a transaction value TV_i and can be represented by a corresponding data string C_i, the protocol comprising:

A. a first party receiving from a second party information I_j enabling the first party to verify that a check C_j is payable;

wherein said check C_j is selected by the second party from a plurality of checks C_i ($i = 1, \ldots, n$) derived by a third party from a corresponding one of said plurality of transactions T_i ($i = 1, \ldots, n$); and

wherein the selection of said check C_j is substantially unpredictable by said third party;

B. the first party, upon receiving I_j, verifying whether C_j is indeed payable; and

C. the first party causing a fourth party to receive a credit amount CR_i, and causing the third party to be debited by a debit amount D_i,

188. The system of claim 165 wherein the micropayment selection protocol establishes payment for a plurality of n transactions $T_1, T_2, \ldots T_i, \ldots T_n$, wherein each transaction T_i is characterized in part by a transaction value TV_i that is a multiple of a unit value UV, the protocol comprising:

A. a first party deriving from each transaction T_i a data string C_i corresponding to T_i, and causing a second party to receive C_i;

wherein each data string C_i includes information on said integer index i and said value TV_i of T_i in the form of a vector $(S_i, S_i + v_i - 1)$;

wherein for all i between 1 and n, S_i is a progressive serial number that is sequentially ordered and that is representative of a position of C_i relative to other data strings in an ordered succession of data strings C_j ($j = 1, \ldots, n$); and

wherein v_i is an integer depending on i and indicative of the value TV_i of T_i, and is given by $v_i = TV_i / (UV)$;

B. the second party selecting the checks C_j ($1 \leq j \leq n$) that are payable in a manner that prevents the first party from predicting in advance which checks C_j will be selected to be payable;

C. the second party causing a third party to receive information I_j enabling the third party to verify that a selected check C_j is payable;

D. the third party, in response to receipt of I_j, verifying that a selected check C_j is payable; and

E. only if C_j is payable:

a) a fifth party determining the value of S_{max},

wherein max is an integer such that $1 \leq max < i \leq n$, and $v_{max} = TV_{max} / (UV)$; and

wherein S_{max} represents the largest of any serial number S_k ($1 \leq k < n$) contained in C_k for which:

i) C_k is received by the second party before receiving C_i; and

ii) the third party has verified that V_k satisfies P_k; and

iii) said first party was debited by a non-zero amount D_k, and

b) said fifth party causing a fourth party to receive a credit amount CR; and

c) said fifth party causing the first party to be debited by a debit amount D_i, where D_i is given by: $(S_i + v_i - 1 - S_{max}) * UV$.

189. The system of claim 165 wherein the micropayment selection protocol establishes payment for a plurality of n transactions $T_1, T_2, \ldots T_i, \ldots T_n$, wherein an index i between 1 and n is associated with each T_i, and wherein each transaction T_i is characterized in part by a transaction value TV_i that is an integral multiple of a unit value UV, the protocol comprising:

A. a first party deriving from each transaction T_i a data string C_i corresponding

to T_i and causing a second party to receive C_i;

wherein each data string C_i includes information on said integer index i and said value TV_i of T_i in the form of a vector $(S_i, S_i + v_i - 1)$;

wherein for all i between 1 and n, Si is a progressive serial number that is sequentially ordered and that is representative of a position of C_i relative to other data strings in an ordered succession of data strings C_j $(j = 1, \ldots, n)$; and

wherein v_i is an integer depending on i and indicative of the value TV_i of T_i, and is given by $v_i = TV_i / (UV)$;

B. the second party associating with C_i an item V_i, wherein V_i is substantially unpredictable by the first party;

C. the second party determining whether a property P_i holds between C_i and V_i, and if so, the second party causing a third party to receive information I_i enabling the third party to verify whether V_i satisfies P_i;

D. the third party verifying whether V_i satisfies P_i; and only if V_i satisfies P_i:

a) a fifth party determining the value of S_{max},

wherein max is an integer such that $1 \leq max < i \leq n$, and $v_{max} = TV_{max} / (UV)$; and

wherein S_{max} represents the largest of any serial number S_k $(1 \leq k < n)$ contained in C_k for which:

i) C_k is received by the second party before receiving C_i; and

ii) the third party has verified that V_k satisfies P_k; and

iii) said first party was debited by a non-zero amount D_k, and

b) said fifth party causing a fourth party to receive a credit amount CR; and

c) said fifth party causing the first party to be debited by a debit amount D_i, where D_i is given by: $(S_i + v_i - 1 - S_{max}) * UV$.

190. The system of claim 165 wherein the micropayment selection protocol establishes payment for a plurality of n transactions T_i (i = 1, . . . , n), each transaction T_i having a value TV_i, the protocol comprising:

a. a first party deriving from each T_i a data string C_i related to T_i, and causing a second party to receive said data string C_i;

b. the second party uniquely associating groups of said data strings C_i (i = 1, . . . , n) into m lists L^k, where k = 1, . . . , m;

wherein each list L^k includes data strings $C^k_1, \ldots, C^k_{l_k}$, and

wherein $\Sigma^m_{k=1} l_k = n$;

c. the second party committing to L^k (k = 1, . . . , m), by computing a commitment CM^k for each L^k, and causing a third party to receive CM^k (k = 1, . . . , m);

d. the third party, in response to receipt of CM^k (k = 1, . . . , m), selecting one or more integer indices $i_1, i_2, \ldots i_r$, and causing the second party to receive said indices $i_1, i_2, \ldots i_r$, wherein $1 \leq i_r \leq m$;

e. in response to receipt of said indices $i_1, i_2, \ldots i_r$, the second party de-committing $CM^{i1}, CM^{i2} \ldots CM^{ir}$, thereby revealing $L^{i1}, \ldots, L^{ir}$ to the third party; and

f. a fifth party causing a fourth party to receive a credit amount CR, and causing the first party to be debited by a debit amount D.

191. The system of claim 165 wherein the micropayment selection protocol establishes payment for a plurality of n transactions $T_1, \ldots, T_i, \ldots, T_n$, each transaction T_i having a value TV_i, the protocol comprising:

A. for each T_i, a first party receiving from a second party a data string C_i derived from T_i;

B. the first party uniquely associating groups of said data strings C_i (i = 1, . . . ,

n) into m lists L^k, where k = 1, . . . , m;

wherein each list L^k includes data strings $C^k_1, \ldots, C^k l_k$, and

wherein $\Sigma^m_{k=1} l_k = n$;

C. the first party committing to L^k (k = 1, . . . , m), by computing a commitment CM^k for each L^k, and causing a third party to receive CM^k (k = 1, . . . , m), thereby enabling the third party to select one or more integer indices $i_1, i_2, \ldots i_r$, wherein $1 \leq i_r \leq m$;

D. upon receipt of said indices $i_1, i_2, \ldots i_r$, the first party de-committing CM^{i1}, CM^{i2}. . . CM^{ir}, thereby revealing $L^{i1}, \ldots, L^{ir}$ to the third party and enabling the third party to cause a fourth party to receive a credit amount CR, and the second party to be debited by a debit amount D.

192. The system of claim 165 wherein the micropayment selection protocol establishes payment for a plurality of n transactions $T_1, \ldots, T_i, \ldots, T_n$, wherein each transaction T_i has a value TV_i and can be represented by a corresponding data string C_i derived from T_i, and wherein groups of said data strings C_i (i = 1, . . . , n) can be uniquely associated into m lists L^k (k = 1, . . . , m), each list L^k includes data strings $C^k_1, \ldots, C^k l_k$ ($\Sigma^m_{k=1} l_k = n$), the protocol comprising:

A. a first party receiving from a second party a commitment CM^k for each of the m lists L_k (k = 1, . . . , m);

B. the first party, upon receiving CM^k (k = 1, . . . , m), selecting one or more integer indices $i_1, i_2, \ldots i_r$, wherein $1 \leq i_r \leq m$, and causing the second party to receive said indices $i_1, i_2, \ldots i_r$, thereby enabling the second party to de-commit CM^{i1}, CM^{i2}. . . CM^{ir} so as to revealing $L^{i1}, \ldots, L^{ir}$ to the first party;

C. the first party causing a third party to receive a credit amount CR, and a fourth party to be debited by a debit amount D.

193. A secure payment processing system comprising:

at least one secure module; and

at least one non-secure module;

wherein a plurality of tokens are transferred between the at least one secure module and the at least one non-secure module;

wherein at least one of the modules includes a computer program product residing on a computer readable medium having a plurality of instructions stored thereon which, when executed by the processor, cause that processor to select one or more, but not all, of the tokens for processing from the plurality of tokens.

194. The system of claim 193 wherein the at least one secure module includes a cPSP module.

195. The system of claim 193 wherein the at least one secure module includes an mPSP module.

196. The system of claim 193 wherein the at least one non-secure module includes a consumer agent module.

197. The system of claim 193 wherein the at least one non-secure module includes an offer development module.

198. The system of claim 193 wherein the at least one non-secure module includes a PCS module.

199. The system of claim 193 wherein the computer program product establishes payment for a transaction T, wherein the instructions for selecting one or more

micropayment tokens include instructions for:

A. a first party deriving from T a data string C related to T, and causing a second party to receive at least a portion of said data string C;

B. the second party associating with said at least a portion of C an item V, wherein V is substantially unpredictable by the first party;

C. the second party determining whether V satisfies a property P, and if so, the second party causing a third party to receive information I enabling the third party to verify whether V satisfies said property P;

D. the third party, upon receiving I, verifying whether V satisfies said property P; and

E. the third party causing a fourth party to receive an amount A, only if V satisfies said property P.

200. The system of claim 193 wherein the computer program product allows a user U to establish payment to a merchant M for a transaction T having a transaction value T_V, wherein the instructions for selecting one or more micropayment tokens include instructions for:

A. the user establishing a public key and a corresponding secret key for a first digital signature scheme, and deriving from T a data string $C = SIG_U(T)$ to create an electronic check containing C, wherein $SIG_U(T)$ represents the digital signature of the user U for the transaction T in said first digital signature scheme;

B. the user causing the merchant to receive said data string C;

C. the merchant establishing a public key and a corresponding secret key for a second digital signature scheme, and associating with said data string C an item $V = SIG_M(C)$, wherein $SIG_M(C)$ represents the digital signature of the merchant M for said data string C in said second digital signature scheme;

D. the merchant computing the value $F(V)=F(SIG_M(C))$, where F represents a

public function that operates on a bit string to output a number between 0 and 1;

E. the merchant comparing $F(SIG_M(C))$ with a constant s to determine whether $F(V) < s$, and if so, causing a bank to obtain said public key of the merchant;

F. the bank using said public key of the merchant to verify that $F(SIG_M(C)) < s$; and

G. only if $F(SIG_M(C)) < s$, the bank causing the merchant to receive an amount $A = [T_V * 1/s]$;

wherein s is a constant greater than 0 and less than 1, and represents the probability that the electronic check be selected for presentation to the bank.

201. The system of claim 193 wherein the computer program product establishes payment for a transaction T, wherein the instructions for selecting one or more micropayment tokens include instructions for:

A. a first party receiving from a second party at least a portion of a data string C, wherein said data string C is related to T;

B. the first party associating with said at least a portion of C an item V, wherein V is substantially unpredictable by the second party; and

C. the first party determining whether V satisfies a property P, and only if so, the first party causing a third party to receive information I enabling the third party to verify whether V satisfies said property P, thereby enabling the third party to cause a fourth party to receive an amount A upon verification that V satisfies P.

202. The system of claim 193 wherein the computer program product establishes payment for a transaction T, wherein the instructions for selecting one or more micropayment tokens include instructions for:

A. a first party receiving from a second party information I enabling the first party to verify that an item V satisfies a property P;

wherein said item V is associated with at least a portion of a data string C derived from T by a third party, and

wherein V is substantially unpredictable by said third party;

B. the first party, upon receiving I, verifying whether V satisfies said property P; and

C. the first party causing a fourth party to receive an amount A, only if V satisfies said property P.

203. The system of claim 193 wherein the computer program product establishes payment for a transaction T characterized in part by a time t, wherein the instructions for selecting one or more micropayment tokens include instructions for:

A. a first party deriving from T a data string C related to T, wherein C includes information IN regarding said time t;

B. the first party causing a second party to receive at least a portion of said data string C, wherein said at least a portion of C includes information IN;

C. the second party associating with said at least a portion of C an item V, wherein V is substantially unpredictable by the first party;

D. the second party determining whether V satisfies a property P, and if so, the second party at time t' causing a third party to receive information IN and information I enabling the third party to verify whether V satisfies said property P;

E. the third party, upon receiving I, verifying whether V satisfies said property P; and

F. the third party causing a fourth party to receive an amount A, only if:

a) V satisfies said property P, and

b) $|t' - t|$ is less than a predetermined time interval.

204. The system of claim 193 wherein the computer program product establishes

payment for a transaction T, wherein the instructions for selecting one or more micropayment tokens include instructions for:

A. a first party deriving from T a data string C related to T, and causing a second party to receive at least a portion of said data string C;

B. the second party determining whether a property P holds between said at least a portion of C and a quantity Q depending on C, wherein Q is substantially unpredictable by the first party, and if so, the second party causing a third party to receive information I enabling the third party to verify that said property P is satisfied;

C. the third party, upon receiving I, verifying whether said property P is satisfied; and

D. only upon verifying that said property P holds between said at least a portion of C and Q, the third party causing a fourth party to receive an amount A.

205. The system of claim 193 wherein the computer program product establishes payment for a transaction T characterized in part by a time t, wherein the instructions for selecting one or more micropayment tokens include instructions for:

A. a first party deriving from T a data string C related to T;

B. a second party deriving a sequence of values VL_i associated with a sequence of times t_i ($i = 1, \ldots, n$), wherein for at least one integer m greater than 1 and less than n, $|t - t_m|$ is less than a predetermined amount;

C. the first party causing the second party to receive at least a portion of said data string C, wherein said portion includes information regarding the time t of said transaction T;

D. the second party determining whether a property P holds between said portion of C, and one of said value VL_m associated with t_m, and a quantity Q depending on VL_m;

E. if P holds, the second party causing a third party to receive information I enabling the third party to verify that said property P is satisfied;

F. the third party, upon receiving I, verifying whether Q satisfies P; and

G. the third party causing a fourth party to receive an amount A, only if Q satisfies said property P.

206. The system of claim 193 wherein the computer program product establishes payment for a transaction T characterized in part by a transaction t, wherein the instructions for selecting one or more micropayment tokens include instructions for:

A. a first party deriving from T a data string C related to T, wherein C includes information regarding t;

B. a second party deriving a sequence of values V_i associated with a sequence of time units t_i ($i = 1, \ldots, n$);

wherein each pair of adjacent time units t_{i+1} and t_i defines a time interval $\Delta t_i = t_{i+1} - t_i$; and

wherein for at least an integer m greater than 1 and less than n, said time t is within the time interval Δt_m;

C. at the beginning of said time interval Δt_m, the second party deriving a value Q_m associated with V_m, wherein Q_m is substantially unpredictable by the first party;

D. during said time interval Δt_m:

a) the first party causing the second party to receive at least a portion of C;

b) the second party determining whether a property P holds between said portion of C and Q_m, and if so, the second party causing a third party to receive information I enabling the third party to verify that said property P is satisfied;

E. the third party, upon receiving I, verifying whether Q satisfies P; and

F. the third party causing a fourth party to receive an amount A, only if Q satisfies said property P.

207. The system of claim 193 wherein the computer program product establishes payment for a transaction T characterized in part by a time t, wherein the instructions for selecting one or more micropayment tokens include instructions for:

A. a first party deriving from T a data string C related to T, wherein C includes information F regarding t;

B. a second party deriving a sequence of values x_i ($i = 0, 1, \ldots, n$) associated with a sequence of time values t_i ($i = 0, 1, \ldots, n$), and making x_0 public;

wherein $x_i = H(x_{i+1})$ for $i = 0, 1, \ldots, n-1$, where H is a one-way hash function;

wherein each pair of adjacent time values t_{i+1} and t_i defines a time interval $\Delta t_i = t_{i+1} - t_i$; and

wherein for at least an integer m greater than 1 and less than n, said time t is the time interval Δt_m;

C. during said time interval Δt_m, the first party causing the second party to receive at least a portion of C, wherein said portion includes F;

D. during said time interval Δt_m, the second party determining whether a property P holds between Q_m and said portion of C, and if so, the second party causing a third party to receive information I enabling the third party to verify that said property P is satisfied;

E. the third party, upon receiving I, verifying whether Q_m satisfies P; and

F. the third party causing a fourth party to receive an amount A, only if Q satisfies said property P.

208. The system of claim 193 wherein the computer program product establishes

payment for a transaction T characterized in part by a time t, wherein the instructions for selecting one or more micropayment tokens include instructions for:

A. a first party receiving from a second party at time t' information I enabling the first party to verify that an item V satisfies a property P;

wherein said item V is associated with at least a portion of a data string C that is derived from T by a third party and that includes information regarding t; and

wherein V is substantially unpredictable by said third party;

B. the first party, upon receiving I, verifying whether V satisfies said property P; and

C. the first party causing a fourth party to receive an amount A, only if:

a) V satisfies said property P; and

b) $|t' - t|$ is less than a predetermined amount.

209. The system of claim 193 wherein the computer program product establishes payment for a transaction T characterized in part by a time t, wherein the instructions for selecting one or more micropayment tokens include instructions for:

A. a first party receiving from a second party at least a portion of a data string C, wherein said data string C is related to T, and wherein said portion of C includes information on t;

B. the first party associating with said at least a portion of C an item V, wherein V is substantially unpredictable by the second party; and

C. the first party determining whether V satisfies a property P, and if so, the first party at a time t' causing a third party to receive information I enabling the third party to verify whether V satisfies said property P, thereby enabling the third party to cause a fourth party to receive an amount A, provided that

a) V satisfies P; and

b) $| t' - t |$ is less than a predetermined amount.

210. The system of claim 193 wherein the computer program product establishes payment for a plurality of n transactions $T_1, T_2, \ldots T_i, \ldots T_n$, wherein an index i, between 1 and n, can be associated with each T_i, and wherein each transaction T_i is characterized in part by a transaction value TV_i, wherein the instructions for selecting one or more micropayment tokens include instructions for:

A. a first party using a probabilistic payment scheme to generate a check C_i for each transaction T_i and causing a second party to receive said C_i, wherein C_i includes an indication of the index i;

B. the second party selecting the checks C_j ($1 \leq j \leq n$) that are payable in a manner that prevents the first party from predicting in advance which checks C_j will be selected to be payable;

C. the second party causing a third party to receive information I_j enabling the third party to verify that a selected check C_j is payable;

D. the third party, in response to receipt of I_j, verifying that a selected check C_j is payable; and

E. only if C_j is payable, a fifth party causing a fourth party to receive a credit amount CR_j, and causing the first party to be debited by a debit amount D_j so that, for all index j between 1 and n, and for any selection of payable checks, $D=D_1+D_2+...+D_j$ is no greater than $TV_{agg} = TV_1 + TV_2 + \ldots + TV_j$.

211. The system of claim 193 wherein the computer program product establishes payment for a plurality of n transactions $T_1, T_2, \ldots T_i, \ldots T_n$, wherein an index i, between 1 and n, can be associated with each T_i, and wherein each transaction T_i is characterized in part by a transaction value TV_i, wherein the instructions for selecting one or more micropayment tokens include instructions for:

A. a first party deriving from each transaction T_i a data string C_i related to T_i,

and causing a second party to receive said data string C_i;

B. the second party associating with each data string C_i an item V_i, wherein V_i is substantially unpredictable by the first party;

C. the second party determining whether V_i satisfies a property P_i, and if so, the second party causing a third party to receive information I_i enabling the third party to verify whether V_i satisfies said property P_i;

D. the third party, in response to receipt of I_i, verifying whether V_i satisfies said property P_i; and

E. only if V_i satisfies said property P_i, a fifth party causing a fourth party to receive a credit amount CR_i, and causing the first party to be debited by a debit amount D_i;

wherein said debit amount D_i is less than or equal to said credit amount CR_i.

212. The system of claim 193 wherein the computer program product pays for a plurality of equal-valued transactions $T_1, T_2, \ldots T_i, \ldots T_n$, each having a value TV, wherein the instructions for selecting one or more micropayment tokens include instructions for:

A. a first party deriving from each transaction T_i a data string C_i related to T_i, and causing a second party to receive said data string C_i;

wherein each data string C_i comprises a progressive serial number S_i, said serial number S_i being sequentially ordered starting from 1 and being representative of a position of C_i relative to other data strings in an ordered succession of data strings C_j ($j = 1, \ldots, n$);

B. the second party associating with C_i an item V_i, wherein V_i is substantially unpredictable by the first party;

C. the second party determining whether a property P_i holds between C_i and V_i, and if so, the second party causing a third party to receive information I_i enabling the third party to verify whether V_i satisfies P_i;

D. the third party verifying whether V_i satisfies P_i; and only if V_i satisfies P_i:

a) a fifth party determining the value of S_{max}, wherein S_{max} represents the largest of any serial number S_k contained in C_k for which:

i) $1 \leq k < n$;

ii) C_k is received by second party before receiving C_i;

iii) the third party has verified that V_k satisfies P_k; and

iv) said first party has been debited by a nonzero amount D_k;

b) said fifth party causing a fourth party to receive a credit amount CR; and

c) said fifth party causing the first party to be debited by a debit amount D_i, where D_i is given by:

$(S_i - S_{max}) * TV.$

213. The system of claim 193 wherein the computer program product allows a user to establish payment to a merchant M for a plurality of transactions T_i ($i = 1, \ldots, n$) having transaction values TV_i ($i = 1, \ldots, n$), wherein the instructions for selecting one or more micropayment tokens include instructions for:

A. the user U establishing a public key and a corresponding secret key for a first digital signature scheme, and deriving from each T_i a data string $C_i = SIG_U(T_i)$ and creating an electronic check CH_i that contains C_i and a serial number S_i;

wherein $SIG_U(T_i)$ represents the digital signature of the user U_i for the transaction T_i in said first digital signature scheme;

wherein S_i is a progressive serial number representative of an order of said data string C_i relative to the other data strings in an ordered succession of data strings C_j ($j = 1, \ldots, n$) derived by said first party;

B. the user U causing the merchant M to receive said electronic check CH_i

containing C_i and S_i;

C. the merchant M establishing a public key and a corresponding secret key for a second digital signature scheme, and associating with said data string C_i an item $V_i = SIG_M(C_i)$, wherein $SIG_M(C_i)$ represents the digital signature of the merchant M for said data string Ci in said second digital signature scheme;

D. the merchant M computing the value $F(V_i)=F(SIG_M(C_i))$, where F represents a public function that operates on a bit string to output a number between 0 and 1;

E. the merchant M comparing $F(SIG_M(C_i))$ with a constant s ($0 < s < 1$) to determine whether $F(V_i) < s$, and if so, causing a bank to obtain said public key of the merchant M;

F. the bank using the merchant's public key to verify that $F(SIG_M(C_i)) <s$; and

G. only if $F(SIG_M(C_i)) < s$,

a) a fifth party determining the value of S_{max}, wherein S_{max} represents the largest serial number S_j contained in any CH_j in said ordered succession upon which payment was made;

b) said fifth party causing a fourth party to receive a credit amount CR; and

c) said fifth party causing the first party to be debited by a debit amount D_i.

214. The system of claim 193 wherein the computer program product establishes payment for a plurality of n transactions $T_1, T_2, \ldots, T_i, \ldots, T_n$, wherein an index i, between 1 and n, can be associated with each T_i, and wherein each transaction T_i is characterized in part by a transaction value TV_i, wherein the instructions for selecting one or more micropayment tokens include instructions for:

A. a first party receiving from a second party at least a portion of a data string

Ci for each Ti, wherein each data string Ci is generated from Ti using a probabilistic payment scheme, and wherein each Ci includes an indication of the index i;

B. the first party selecting the checks Cj (j less than or equal to n and greater than or equal to 1) that are payable in a manner that prevents the first party from predicting in advance which checks Cj will be selected as payable;

C. for each selected check Cj, the first party causing a third party to receive information Ij enabling the third party to verify that the selected check Cj is indeed payable, thereby enabling the third party, upon verification that Cj is payable, to cause a fourth party to receive a credit amount CRj and the second party to be debited by a debit amount Dj so that, for all index j between 1 and n, and for any selection of payable checks Cj, $D = D_1 + D_2 + \ldots D_j$ is no greater than $TV_{agg} = TV_1 + TV_2 + \ldots + TV_j$.

215. The system of claim 193 wherein the computer program product establishes payment for a plurality of n transactions $T_1, T_2, \ldots, T_i, \ldots, T_n$, wherein an index i, between 1 and n, can be associated with each T_i, and wherein each transaction T_i is characterized in part by a transaction value TV_i and can be represented by a corresponding data string C_i, wherein the instructions for selecting one or more micropayment tokens include instructions for:

A. a first party receiving from a second party information I_j enabling the first party to verify that a check C_j is payable;

wherein said check C_j is selected by the second party from a plurality of checks C_i ($i = 1, \ldots, n$) derived by a third party from a corresponding one of said plurality of transactions T_i ($i = 1, \ldots, n$); and

wherein the selection of said check C_j is substantially unpredictable by said third party;

B. the first party, upon receiving I_j, verifying whether C_j is indeed payable; and

C. the first party causing a fourth party to receive a credit amount CR_i, and causing the third party to be debited by a debit amount D_i,

216. The system of claim 193 wherein the computer program product establishes payment for a plurality of n transactions $T_1, T_2, \ldots T_i, \ldots T_n$, wherein each transaction T_i is characterized in part by a transaction value TV_i that is a multiple of a unit value UV, wherein the instructions for selecting one or more micropayment tokens include instructions for:

A. a first party deriving from each transaction T_i a data string C_i corresponding to T_i, and causing a second party to receive C_i;

wherein each data string C_i includes information on said integer index i and said value TV_i of T_i in the form of a vector $(S_i, S_i + v_i - 1)$;

wherein for all i between 1 and n, S_i is a progressive serial number that is sequentially ordered and that is representative of a position of C_i relative to other data strings in an ordered succession of data strings C_j $(j = 1, \ldots, n)$; and

wherein v_i is an integer depending on i and indicative of the value TV_i of T_i, and is given by $v_i = TV_i / (UV)$;

B. the second party selecting the checks C_j $(1 \leq j \leq n)$ that are payable in a manner that prevents the first party from predicting in advance which checks C_j will be selected to be payable;

C. the second party causing a third party to receive information I_j enabling the third party to verify that a selected check C_j is payable;

D. the third party, in response to receipt of I_j, verifying that a selected check C_j is payable; and

E. only if C_j is payable:

a) a fifth party determining the value of S_{max},

wherein max is an integer such that $1 \leq max < i \leq n$, and $v_{max} =$

TV_{max} / (UV); and

wherein S_{max} represents the largest of any serial number S_k ($1 \leq k < n$) contained in C_k for which:

i) C_k is received by the second party before receiving C_i; and

ii) the third party has verified that V_k satisfies P_k; and

iii) said first party was debited by a non-zero amount D_k, and

b) said fifth party causing a fourth party to receive a credit amount CR; and

c) said fifth party causing the first party to be debited by a debit amount D_i, where D_i is given by: $(S_i + v_i - 1 - S_{max}) * UV$.

217. The system of claim 193 wherein the computer program product establishes payment for a plurality of n transactions $T_1, T_2, \ldots T_i, \ldots T_n$, wherein an index i between 1 and n is associated with each T_i, and wherein each transaction T_i is characterized in part by a transaction value TV_i that is an integral multiple of a unit value UV, wherein the instructions for selecting one or more micropayment tokens include instructions for:

A. a first party deriving from each transaction T_i a data string C_i corresponding to T_i and causing a second party to receive C_i;

wherein each data string C_i includes information on said integer index i and said value TV_i of T_i in the form of a vector $(S_i, S_i + v_i - 1)$;

wherein for all i between 1 and n, Si is a progressive serial number that is sequentially ordered and that is representative of a position of C_i relative to other data strings in an ordered succession of data strings C_j ($j = 1, \ldots, n$); and

wherein v_i is an integer depending on i and indicative of the value TV_i of T_i, and is given by $v_i = TV_i / (UV)$;

B. the second party associating with C_i an item V_i, wherein V_i is substantially unpredictable by the first party;

C. the second party determining whether a property P_i holds between C_i and V_i, and if so, the second party causing a third party to receive information I_i enabling the third party to verify whether V_i satisfies P_i;

D. the third party verifying whether V_i satisfies P_i; and only if V_i satisfies P_i:

a) a fifth party determining the value of S_{max},

wherein max is an integer such that $1 \leq max < i \leq n$, and $v_{max} = TV_{max} / (UV)$; and

wherein S_{max} represents the largest of any serial number S_k $(1 \leq k < n)$ contained in C_k for which:

i) C_k is received by the second party before receiving C_i; and

ii) the third party has verified that V_k satisfies P_k; and

iii) said first party was debited by a non-zero amount D_k, and

b) said fifth party causing a fourth party to receive a credit amount CR; and

c) said fifth party causing the first party to be debited by a debit amount D_i, where D_i is given by: $(S_i + v_i - 1 - S_{max}) * UV$.

218. The system of claim 193 wherein the computer program product establishes payment for a plurality of n transactions T_i $(i = 1, \ldots, n)$, each transaction T_i having a value TV_i, wherein the instructions for selecting one or more micropayment tokens include instructions for:

a. a first party deriving from each T_i a data string C_i related to T_i, and causing a second party to receive said data string C_i;

b. the second party uniquely associating groups of said data strings C_i $(i = 1, \ldots, n)$ into m lists L^k, where $k = 1, \ldots, m$;

wherein each list L^k includes data strings $C^k_1, \ldots, C^k_{l_k}$, and

wherein $\Sigma^m_{k=1} l_k = n$;

c. the second party committing to L^k (k = 1, . . . , m), by computing a commitment CM^k for each L^k, and causing a third party to receive CM^k (k = 1, . . . , m);

d. the third party, in response to receipt of CM^k (k = 1, . . . , m), selecting one or more integer indices $i_1, i_2, \ldots i_r$, and causing the second party to receive said indices $i_1, i_2, \ldots i_r$, wherein $1 \leq i_r \leq m$;

e. in response to receipt of said indices $i_1, i_2, \ldots i_r$, the second party de-committing $CM^{i1}, CM^{i2} \ldots CM^{ir}$, thereby revealing $L^{i1}, \ldots, L^{ir}$ to the third party; and

f. a fifth party causing a fourth party to receive a credit amount CR, and causing the first party to be debited by a debit amount D.

219. The system of claim 193 wherein the computer program product establishes payment for a plurality of n transactions $T_1, \ldots, T_i, \ldots, T_n$, each transaction T_i having a value TV_i, wherein the instructions for selecting one or more micropayment tokens include instructions for:

A. for each T_i, a first party receiving from a second party a data string C_i derived from T_i;

B. the first party uniquely associating groups of said data strings C_i (i = 1, . . . , n) into m lists L^k, where k = 1, . . . , m;

wherein each list L^k includes data strings $C^k_1, \ldots, C^k l_k$, and

wherein $\Sigma^m_{k=1} l_k = n$;

C. the first party committing to L^k (k = 1, . . . , m), by computing a commitment CM^k for each L^k, and causing a third party to receive CM^k (k = 1, . . . , m), thereby enabling the third party to select one or more integer indices $i_1, i_2, \ldots i_r$, wherein $1 \leq i_r \leq m$;

D. upon receipt of said indices $i_1, i_2, \ldots i_r$, the first party de-committing CM^{i1},

CM^{i2}. . . CM^{ir}, thereby revealing L^{i1}, . . ., L^{ir} to the third party and enabling the third party to cause a fourth party to receive a credit amount CR, and the second party to be debited by a debit amount D.

220. The system of claim 193 wherein the computer program product establishes payment for a plurality of n transactions $T_1, \ldots, T_i, \ldots, T_n$, wherein each transaction T_i has a value TV_i and can be represented by a corresponding data string C_i derived from T_i, and wherein groups of said data strings C_i ($i = 1, \ldots, n$) can be uniquely associated into m lists L^k ($k = 1, \ldots, m$), each list L^k includes data strings $C^k_1, \ldots, C^k_{l_k}$ ($\Sigma^m_{k=1} l_k = n$), wherein the instructions for selecting one or more micropayment tokens include instructions for:

A. a first party receiving from a second party a commitment CM^k for each of the m lists L_k ($k = 1, \ldots, m$);

B. the first party, upon receiving CM^k ($k = 1, \ldots, m$), selecting one or more integer indices $i_1, i_2, \ldots i_r$, wherein $1 \leq i_r \leq m$, and causing the second party to receive said indices $i_1, i_2, \ldots i_r$, thereby enabling the second party to de-commit CM^{i1}, CM^{i2}. . . CM^{ir} so as to revealing L^{i1}, . . ., L^{ir} to the first party;

C. the first party causing a third party to receive a credit amount CR, and a fourth party to be debited by a debit amount D.